

In the Claims:

Cancel all claims and add the following new claims 15-27, as follows:

1-14. (Canceled)

15. (New) A semiconductor device of IGBT comprising:
 an emitter electrode;
 a top region of a second conductivity type connected to the emitter electrode;
 a deep region of the second conductivity type;
 an intermediate region of a first conductivity type isolating the top region and the deep region;
 a collector region of the first conductivity type connected to the deep region, the collector region being isolated from the intermediate region by the deep region;
 a collector electrode connected to the collector region;
 a gate electrode facing a portion of the intermediate region via an insulating layer, the portion of the intermediate region isolating the top region and the deep region; and
 a barrier region comprising a semiconductor region of the second conductivity type formed within the intermediate region,
 wherein the intermediate region comprises a dense portion directly connected to the emitter electrode, and a main portion connected to the emitter electrode via the dense portion,
 wherein the barrier region is in contact with the dense portion, and is separated from the deep region by the main portion.
16. (New) A semiconductor device according to claim 15,
 wherein the barrier region further comprises an insulator.
17. (New) A semiconductor device according to claim 15,
 wherein the thickness of the top region is less than the thickness of the barrier region.

18. (New) A semiconductor device of IGBT comprising:
an emitter electrode;
a top region of a second conductivity type connected to the emitter electrode;
a deep region of the second conductivity type;
an intermediate region of a first conductivity type connected to the emitter electrode, the intermediate region isolating the top region and the deep region;
a collector region of the first conductivity type connected to the deep region, the collector region being isolated from the intermediate region by the deep region;
a collector electrode connected to the collector region;
a gate electrode facing a portion of the intermediate region via an insulating layer, the portion of the intermediate region isolating the top region and the deep region; and
a barrier region comprising a semiconductor region of the first conductivity type formed within the intermediate region;
wherein the barrier region has a higher concentration of impurities than the intermediate region, and the barrier region is formed along a boundary between the top region and the intermediate region, and is electrically connected to the emitter electrode.

19. (New) A semiconductor device according to claim 18,
wherein the thickness of the top region is less than the thickness of the barrier region.

20. (New) A semiconductor device of IGBT comprising:
an emitter electrode;
a top region of a second conductivity type connected to the emitter electrode;
a deep region of the second conductivity type;
an intermediate region of a first conductivity type connected to the emitter electrode, the intermediate region isolating the top region and the deep

region;

a collector region of the first conductivity type connected to the deep region, the collector region being isolated from the intermediate region by the deep region;

a collector electrode connected to the collector region;

a gate electrode facing a portion of the intermediate region via an insulating layer, the portion of the intermediate region isolating the top region and the deep region; and

a plurality of barrier regions formed within the intermediate region;

wherein the barrier regions are distributed within the intermediate region along a direction extending between the top region and the deep region.

21. (New) A semiconductor device according to claims 20,
wherein the intermediate region comprises a dense portion directly connected to the emitter electrode, and a main portion connected to the emitter electrode via the dense portion,

wherein at least one of the barrier regions is formed in the vicinity of a boundary between the dense portion and the main portion,

wherein at least the other of the barrier regions is the second conductivity type, is formed in the vicinity of a boundary between the main portion and the deep region, and is electrically disconnected from the emitter electrode and the deep region.

22. (New) A semiconductor device according to claims 21,
wherein at least a portion of the barrier regions are located on a path along which carriers flow.

23. (New) A semiconductor device according to claims 22,
wherein a plurality of pairs of barrier layer and intermediate layer is stacked.

24. (New) A semiconductor device according to claims 19,
wherein the intermediate region comprises a dense portion directly connected to the emitter electrode, and a main portion connected to the emitter

electrode via the dense portion,

wherein at least one of the barrier regions is formed in the vicinity of a boundary between the dense portion and the main portion,

wherein at least the other of the barrier regions is the second conductivity type, is formed at a boundary between the main portion and the deep region, and has a higher concentration of impurities than the deep region.

25. (New) A semiconductor device according to claims 24,
wherein at least a portion of the barrier regions are located on a path along which carriers flow.

26. (New) A semiconductor device according to claims 25,
wherein a plurality of pairs of barrier layer and intermediate layer is stacked.

27. (New) A semiconductor device according to claim 20,
wherein the thickness of the top region is less than the thickness of the barrier region.